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23 July 1980

## JAPAN REPORT

No. 103

## CONTENTS

## POLITICAL AND SOCIOLOGICAL

## Briefs

Consulate of Chiangmai	1
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## MILITARY

Japan, U.S. To Standardize Weapons (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	2
SDF Missile Procurement Plans Under FY 1980-84 MTD (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	4
Roland Proposed to ASDF SAM Program (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	8
FY 1981 Aircraft Procurement Prospects for Air and Naval Forces (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	9
ASDF To Decide on New Badge System in FY 1981 (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	11
GSDF CH-X Selection Expected in FY 1982 (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	12
Survey Shows Wish for More Defense Power (INDUSTRIA, Jun 80) .....	13

## ECONOMIC

MITI To Develop Advanced Aircraft Technologies From FY 1981 (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	14
Advanced Aircraft Technical Development Center (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	15

MHI's Aircraft Exports Rise 83.2 Percent in FY 1979 (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	16
FHI's Aircraft Business Continuing Steady Growth (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	17
MHI Eyes Prime Contract on MT-X Project (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	18
European Firms Offer Commuter Aircraft Projects With Japan (JPE AVIATION REPORT-WEEKLY, 11 Jun 80) .....	19
Government To Set Up Aircraft Import Financing System (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	21
IHI, KHI Report Drop in Aerospace Division Sales in FY 1979 (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	22
Capital Investment Continues for Three Big Programs (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	23
Hokushin To Promote Instrument Sales for Civil Aircraft (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	25
SJAC Participation at Farnborough (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	26
Radio Company Likely To Develop AA Gunnery Simulator (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	27
High Growth in Postal Savings Analyzed (INDUSTRIA, Jun 80) .....	28
Increasing Expense Accounts Cited (INDUSTRIA, Jun 80) .....	30
Trade Balance Figures for May Revised (KYODO, 27 Jun 80) .....	31
Enterprises See Business Downturn in October-December (KYODO, 1 Jul 80) .....	32
Recessionary Signs Prompt Evaluation of Economy (KYODO, 3 Jul 80) .....	34
1979 Tax Revenues Lower Than Expected (KYODO, 4 Jul 80) .....	35
Industrial Cooperation With UK, FRG Noted (KYODO, 4 Jul 80) .....	36

Leading Corporations for 1979 Named (KYODO, 4 Jul 80) .....	37
Tax Authorities Review Consumer Spending in 1979 (KYODO, 4 Jul 80) .....	39
Construction Ministry Recommends Rural Improvement (KYODO, 8 Jul 80) .....	41
<b>Briefs</b>	
Oil Price Markdown	43
Mexican Crude Shipment	43
Nonferrous Metals Stockpile	43
Oil Rig for Denmark	44
Japan-PRC Economic Association	44
June Gold, Exchange Reserves	44
Thermal Power Plant	44
Export Growth Slows	44

#### SCIENCE AND TECHNOLOGY

TR&DI To Develop Laser-Guided Antitank Missile (JPE AVIATION REPORT-WEEKLY, 18 Jun 80) .....	46
Industrialization of Silicon Carbide Fiber Promoted (INDUSTRIA, Jun 80) .....	47
Development of New Fuel From Methanol, Dust Coal Planned (KYODO, 3 Jul 80) .....	49
<b>Briefs</b>	
Computer Element Improvement	50
New Ground Radar	50

POLITICAL AND SOCIOLOGICAL

BRIEFS

CONSULATE IN CHIANGMAI--Tokyo, 1 Jul--Japan has opened a Japanese consular post at Chiangmai in Thailand, the Foreign Ministry announced Tuesday. Hiroshi Yanagi, counsellor and consul of the Japanese Embassy in Thailand, will serve as the resident officer at the new office, officials said. Establishment of the office was decided mainly to take care of the increasing number of Japanese travelers in Chiangmai, they said. [Text] [OW011305 Tokyo KYODO in English 0700 GMT 1 Jul 80]

CSO: 4120

## MILITARY

### JAPAN, U.S. TO STANDARDIZE WEAPONS

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 p 6

[Text]

Japan and the United States have agreed to standardize weapons for new development and hold regular consultations twice a year between ranking officials of the Japanese Defense Agency (JDA) and the US Defense Department for promotion of bilateral cooperation in research and development of defense technologies.

The agreement came during talks in Tokyo May 28 between William J. Perry, US Undersecretary of Defense for research and engineering, and ranking JDA officials, including Vice Minister for Defense Akira Watari and Director-General Yukio Kurabe of the Equipment Bureau.

Briefing Perry on JDA equipment plans, including selection work on the new BADGE air defense system, under the FY 1980-84 MTDP, the Japanese officials asked for the United States' cooperation in standardizing Japanese and American weapons in the course of research and development of weapons technologies. Perry promised them to consider the proposal, pointing out the United States has been standardizing jet fuels, munitions, missiles and other equipment within the North Atlantic Treaty Organization (NATO).

The JDA officials also requested Perry to allow Japan to absorb more US technologies in license production of F-15 fighters for the ASDF by increasing the ratio of license production. In license production, which has started, Japan is currently given about 40 percent. The remaining components and parts are imported from the United States for assembling in Japan.

The US official replied this problem should be examined further. Even if the ratio of license production is increased, Perry said, Japan would have to make further efforts for research and development to utilize US advanced technologies efficiently.

As for the regular consultations, they decided to hold the first meeting this autumn.

Before the talks with JDA officials, Perry paid a courtesy call on State Minister for Defense Kichizo Hosoda. The US official visited Japan May 27-31.

CSO: 4120



MILITARY

SDF MISSILE PROCUREMENT PLANS UNDER FY 1980-84 MTDP

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 pp 7,8,9

[Text]

Guided missile procurement plans for the three Japanese Self-Defense Forces under the FY '80 - '84 Medium-Term Defense Program (MTDP) follow:

\*ASDF

Nike-J replacement: The Air Self-Defense Force (ASDF) is expected to decide on the new surface-to-air missile to replace the present Nike-J during this fiscal year with procurement slated to start in FY '82. Indications are that either the Raytheon Patriot or an improved version of the Nike-J will be selected. Since the Ground Self-Defense Force (GSDF) is considering the Patriot to replace the Hawk missile system now in service, some ASDF officials are reportedly in favor of the same missile for reducing production and maintenance costs. Mitsubishi Heavy Industries Ltd. (MHI) and other manufacturers pushing for an improved Nike-J suggest use of Phoenix missile and AGW-9 radar technology in order to advance development time. Six Nike-J groups will eventually be replaced.

Air-to-air missile systems for the F-15: Mitsubishi Electric Corporation (MELCO) will produce the radar homing AIM-7F missile for the ASDF/McDonnell Douglas F-15 under Raytheon license. The first 80 to 90 missiles will be funded in FY '80. Approximately 600 AIM-7F missiles will be procured under the MTDP and production is expected to continue in and after FY '85. As for the infrared-ray homing AIM-9L, missiles which will be required in FY '80 will be imported through the government-to-government FMS channel. Depending on negotiations with US authorities in June, the AIM-9L will be produced

in Japan under American license in the future. MHI, MELCO and Toshiba have submitted proposals to the Defense Agency for license production of the missile.

ASM-1 air-to-surface missile for the F-1: The first 25 operational missiles will be funded in FY '80. Approximately 80 to 100 missiles will be purchased annually in and after FY '81 until an improved model is developed.

Short-range surface-to-air missile (SAM): The ASDF plans to procure 12 units of this missile for airbase and radar site air defense missions under the MTDP. The Japanese designed Tan-SAM which will be adopted by the GSDF and the Euromissile Roland are listed as candidates. A decision on type is expected to be made in July.

Portable antiair missile: Procurement of 120 units is planned under the MTDP. The man-portable missile will be used together with the short-range SAM for defense of airbases and radar sites in northern part of Japan. The General Dynamics Stinger and the Shorts Blowpipe are being studied.

\*GSDF

Replacement for the Hawk missile: Under the present Hawk improved program, 4.5 groups of the GSDF's 8.5 Hawk groups will be reequipped with improved Hawks. This program will be completed in FY '81 with the remaining four basic Hawk groups receiving new missiles. A decision on the new missile is expected to be made in FY '80 so procurement can start in FY '82. The Raytheon Patriot is reportedly the likely choice to replace the basic Hawk. If the ASDF also adopts the Patriot to replace the Nike-J, operational coordination between the ground and air forces may become necessary at higher levels, sources report.

Tan-SAM: The GSDF plans to purchase 24 units of the Japanese designed Tan-SAM short-range antiair missile for divisional deployment under the MTDP. One unit consists of four missile launchers, and six to eight units are expected to be deployed within each division. An infrared-ray homing type, the missile has a range of about seven kilometers and maximum speed of Mach 2. Toshiba is the prime contractor. Fujitsu supplies radar and electric systems, KHI missile airframes, FHI launchers, Nissan Motor rocket propulsion

systems, Asahi Chemical propellants, Chugoku Kayaku loading systems and Teijim Seiki actuators.

**Portable SAM:** The GSDF plans to order 151 portable missile launchers for air defense of tank and artillery forces by FY '84. The General Dynamics Stinger is considered the likely choice. The GSDF plans to procure more than 1,000 units of this missile eventually. A Japanese designed portable missile may replace the Stinger in and after FY '87 depending on its performance.

**TOW missile for antitank helicopters:** In line with the GSDF plan to procure 56 Bell AH-1S antitank helicopters, approximately 450 TOW missiles will be purchased through the FMS channel. Production of the missile under license will be considered depending on the helicopter program.

**Model 79 SSM:** The GSDF plans to procure 33 units of the Model 79 SSM antitank/antiship missile under the MTDP. Eight units will be assigned to each division deployed in northern Japan. TR&DI is promoting development of the Chu-MAT antitank precision guided missile which is expected to become operational around FY '87.

**Model 64 MAT:** Procurement of this missile will be terminated with the purchase of last four units in FY '80. However, about 220 launcher units will be in service at the end of FY '84.

#### **\*MSDF**

**Shipborne missiles:** Thirty-five warships which will be equipped with various missiles will be in service with the Maritime Self-Defense Force (MSDF) by the end of FY '84. In addition to 16 warships, i.e., two DDGs, ten DDs and four DEs, which will be constructed under the MTDP, four DDAs and four DDHs will be equipped with missiles under the Fleet Rehabilitation and Modernization (FRAM) Program. Five DDs and two DEs funded during FY '77 - '79 will also be armed with missiles. The MSDF presently has four DDG missile-carrying destroyers in service. Each DDG will carry 32 Tartar missiles. Each DDG, DD, DE, PMX and DDA will have about eight Harpoon missiles. In addition, each DD, DDA and DDH will be equipped with 16 Sea Sparrow missiles, according to present MSDF planning. The missile-carrying submarine will be armed with six to eight Harpoons. The

Tartar and the Harpoon will be imported through the FMS while the Sea Sparrow will be produced under license.

Portable SAM: The MSDF plans to purchase 68 units of the portable SAM for air defense of regional headquarters, airbases and other facilities in northern areas under the FY '80 - '84 MTDP. The MSDF plans to decide on type after the GSDF and the ASDF make decisions on their respective portable air defense missiles.

Airborne missile: For 45 MSDF/Lockheed P-3C antisubmarine patrol aircraft, the MSDF plans to obtain Harpoon missiles through the FMS channel, starting in FY '80. Each aircraft will be equipped with two Harpoons, according to present planning.

CSO: 4120

## MILITARY

### ROLAND PROPOSED TO ASDF SAM PROGRAM

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 pp 9, 10

[Text]

A proposal on the US Army Roland surface-to-air missile system was recently made to the JDA jointly by Euromissile, Hughes Aircraft and Boeing Aerospace. The joint proposal, which included cost estimates, was prepared for the ASDF to consider as a new air defense system for air bases and radar sites. During the FY '80 - '84 MTDP, the ASDF plans to order various new air defense weapons for protection of its bases and sites and procurement of 12 sets of a new SAM system is being planned for FY 1981 through FY 1984. At the moment, a domestic SAM developed by the TR&DI with Toshiba Corp. is regarded a strong contender with the Roland.

Production of the Roland SAM in the US is carried out jointly by Hughes Aircraft and Boeing Aerospace. The former is responsible for surveillance and tracking radars, optical tracking units, missile guidance sections and final assembly of the missile. Boeing manufactures launchers, command subsystems, unit modules, and firing units. The warhead and the motor are jointly produced by these companies.

It has been learned that the proposal to the JDA includes US Army standard procedures and systems for crew training, system maintenance, and logistic support. The Roland as proposed is said to be of the fixed type.

CSO: 4120

## MILITARY

### FY 1981 AIRCRAFT PROCUREMENT PROSPECTS FOR AIR AND NAVAL FORCES

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 pp 6,7

[Text]

#### \*ASDF

The Air Self-Defense Force (ASDF) plans to request funds for approximately 50 aircraft in the FY 1981 defense budget. They include four Grumman E-2C early warning aircraft, 10 F-1 support fighters, 19 T-2 supersonic trainers, four T-3 primary trainers, three MU-2 turboprops, four V-107A helicopters and six Lockheed C-130 transports.

Priority will be given to the E-2C. Funds to purchase four aircraft were authorized in FY '78. The ASDF plans to take delivery of eight aircraft by FY '85.

During the period of the present Medium-Term Defense Program (MTDP), the air force plans to procure 13 F-1s, 23 T-2s, 10 T-3s, four MU-2s and six V-107As as well as F-15 mainstay interceptor aircraft. For this fiscal year, three F-1s, four T-2s, six T-3s, one MU-2 and two V-107As, in addition to 34 F-15s were authorized. It hopes to obtain funds for the remainders in the FY '81 defense budget.

As for transports, the ASDF plans to purchase 12 new aircraft (C-X) in order to supplement 24 Kawasaki C-1 transports now in service, and the first six will be requested in the FY '81 budget. In present circumstances, the Lockheed C-130 is considered the likely choice as the C-X for the ASDF.



Due to emphasis placed on introduction of the C-130, purchase of new transport helicopters which had been studied by the ASDF mainly for radar site support missions will be postponed until FY '82. It planned to purchase 10 to 12 V-107 class helicopters at a rate of about two aircraft per year, starting in FY '81. It will continue studies on type and requirements of the transport helicopter so that action can be taken in or after FY '82.

The next procurement contract for F-15s will be awarded in FY '82.

\*MSDF

The Maritime Self-Defense Force (MSDF) plans to request funds for 12 HSS-2B antisubmarine helicopters, four TC-90 instrument flight trainers and one KM-2 in the FY '81 defense budget.

Of the 12 HSS-2Bs, eight are for shipborne operations and the remaining four will be land based. Sixteen TC-90s are envisaged for procurement under the current MTDP. Funds for two aircraft were authorized for purchase this fiscal year.

The purchase of two new shipborne ASW helicopters which the MSDF originally planned to request in the FY '81 budget will be postponed one year. It wanted to purchase SH-60Bs with FY '81 funds and equip the aircraft with new ASW devices which will be tested aboard an HSS-2B during this fiscal year. It was suggested that new aircraft should be requested after operational requirements are finalized and evaluation tests of the new ASW devices are completed, sources report. Another reason for delaying procurement of the new helicopters is reportedly that the MSDF will have to give priority to its shipbuilding program in FY '81.

CSO: 4120

## MILITARY

### ASDF TO DECIDE ON NEW BADGE SYSTEM IN FY 1981

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 pp 7,8

[Text]

The ASDF will decide on specifications for the new BADGE air defense system and when it should be deployed in FY 1981 starting next April and begin construction in FY 1982. Prior to a decision, it has been reviewing problems of the current system and studying what the new system should be, in cooperation with the USAF and Mitre Corp. since FY 1979.

Although the current system's faults have not been revealed, informed sources say the current system, which became operational in FY 1968, may be insufficient for comprehensive aircraft detection, tracking and electronic warfare capability as performance of aircraft have advanced. They also point to shortfalls in computer capacity and the necessity of repairing. A switch to a totally new system is considered as a logical choice.

The time to adopt the new system will be just before the second overhaul of the present system presently expected in FY 1985. In making the decision in FY 1981, the ASDF will draft a construction schedule in consideration of the time factor. The new system will be completed in FY 1984 and then tested for one year before replacing the existing system in FY 1985. The decision next fiscal year will also include selection of parts for domestic production.

CSO: 4120



## MILITARY

### GSDF CH-X SELECTION EXPECTED IN FY 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 p 8

[Text]

During the FY '80-'84 MTDP, the GSDF plans to procure 111 combat aircraft besides the Bell AH-1S antitank helicopters. Two CH-Xs, a large helicopter to replace the V-107A, will be purchased before the end of the MTDP.

Procurement of the V-107A transport helicopter will end with an order for one aircraft during FY 1980 and be followed by the CH-X program. The GSDF is authorized three transport helicopters during the FY '80-'84 MTDP and, accordingly, the remaining two aircraft will be CH-Xs.

Requirements for the CH-X include improved capability over the A-107A in three basic missions. It should carry more armed troops; be able to deploy more effectively field artillery and antiaircraft batteries and operational equipment and supplies such as ammunition; and have greater support capability.

The GSDF plans to complete operational research on the CH-X during FY 1980. In FY 1981, it plans to send a specialists team overseas to study CH-X candidates. It is then expected that the CH-X selection will be made in FY 1982 for procurement of the first two helicopters in FY 1983. In selecting the CH-X, the GSDF is said to be placing priority on its own operational requirements and is not so keen on adopting a common helicopter with the ASDF and the MSDF. At present, the V-107A is the only large transport helicopter common to the three branches of the Self-Defense Forces.

Helicopters under study by the GSDF for the CH-X program include the Boeing-Vertol CH-47C, the Sikorsky H-53D, and the Sikorsky CH-53E.

## MILITARY

### SURVEY SHOWS WISH FOR MORE DEFENSE POWER

Tokyo INDUSTRIA in English Jun 80 pp 23-26

[Text]

More than 60% of young managers are afraid that Japan may be invaded by foreign countries, while 22.6% of them believe no foreign forces will attack this country, according to a survey conducted by Japan Junior Chamber, Inc., which consists of the young presidents and executives of Japanese companies. Their ages range from 20 to 40.

The survey was made by means of a questionnaire about "peace and security of Japan" to its 52,562 members during the period between January 20 and February 29, 1980. As for the nation's de-

fense, 62.4% of the members wish to continue the Treaty of Mutual Cooperation and Security between Japan and the United States of America, and to have stronger armed forces. And 91.4% of the members think that the Japanese Self-Defense Forces are necessary, while only 3% of them wish to abolish the Japan-U.S. Security Treaty and the Self-Defense Forces.

In reply to the question, "What will you do if foreign forces invaded Japan?", 3% of the members said that they would not resist against them. But 84.5% of the young managers and executives

will resist in one way or another, according to the survey. More than half of the members hold a view that Japan should have nuclear weapons in the future, and 33.1% is for the adoption of conscription system.

While Japan Junior Chamber had confined its activity within the respective regions where its branch offices are located, it has recently decided to tackle the national problems, especially the nation's defense and the Japan-U.S. Treaty. The above-mentioned survey is the first step in this direction.

CSO: 4120

## ECONOMIC

### MITI TO DEVELOP ADVANCED AIRCRAFT TECHNOLOGIES FROM FY 1981

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 p 2

[Text]

The Ministry of International Trade and Industry (MITI) will start research and development of advanced aircraft technologies in FY 1981. These technologies, forming important elements in future aircraft production, are for aero engines using liquid hydrogen, methanol and other alternative fuels, reinforced lightweight airframe material made from titanium or carbon fiber, and control systems using VLSIs.

MITI acknowledges Japan must push development of these technologies in order to catch up with the United States and Europe in aircraft production in 10 to 20 years. In research and development of aircraft technologies, Japan is behind the United States and France which have been using government funds on research into elementary aircraft technologies for the 21st century. At present, Japan is ready to start new aircraft projects as the Boeing 767 program has got under way and the Y-XX program is to begin in FY 1982.

The ministry intends to adopt promising research and development programs as national projects with the government's full financial support. In the initial stage, however, it will contract private organizations to carry out research using governmental subsidies. An arrangement will be set up to allow organizations to jointly use large computers and other expensive equipment of government-subsidized institutes.

MITI will also expand research and development facilities, such as large wind tunnels for wind pressure tests and government institutes, including the National Aerospace Laboratory (NAL). It plans to ask the Finance Ministry to authorize about ¥20,000 million for the aircraft technology research and development project in FY 1981.

## ECONOMIC

### ADVANCED AIRCRAFT TECHNICAL DEVELOPMENT CENTER

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 pp 2,3

[Text]

The Society of Japanese Aerospace Companies (SJAC) at its 6th regular general meeting late last month decided to establish an Advanced Aircraft Technical Development Center (Kakushin Kokuki Gijutsu Kaihatsu Center). It will be set up June 19 following approval of the center's regulations and staff members at a directors' meeting on the same day.

Creation of the technical center was approved at the general meeting with revision of the Articles of the SJAC. The center is to promote research and development on technology which will be required for development of high-performance advanced aircraft of the future, using systematic and professional efforts.

CSO: 4120

ECONOMIC

MHI'S AIRCRAFT EXPORTS RISE 83.2 PERCENT IN FY 1979

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 p 3

[Text]

Mitsubishi Heavy Industries' (MHI) aircraft exports in FY 1979 rose 83.2 percent over FY 1978 to ¥6,390 million, according to its statement of accounts for the year. Contributing to the sharp increase were active MU-2 sales mainly in the United States and expanded exports of large airliner parts.

Its total aircraft and special vehicle sales in the year totaled ¥131,000 million, up 14.9 percent over the previous fiscal year.

Aircraft sales were up 15.7 percent to ¥111,500 million. Production of MU-2 business aircraft increased along with Boeing 767 airframes and space exploration equipment, while F-4 fighter output declined. Aircraft orders dropped 19.7 percent to ¥109,800 million in the absence of new F-15 orders.

As for special vehicles, sales rose 10.8 percent to ¥19,500 million, and orders 16.4 percent to ¥21,300 million. A main factor was a conspicuous rise in 155mm self-propelled howitzers. Model 74 tank production and orders remained unchanged.

The firm's sales to the Defense Agency in the year increased 6.3 percent to ¥123,000 million, including ships. They accounted for 9.1 percent of its overall sales.

CSO: 4120

## ECONOMIC

### FHI'S AIRCRAFT BUSINESS CONTINUING STEADY GROWTH

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 pp 3,4

[Text]

Fuji Heavy Industries' (FHI) aircraft division expects sales to increase to ¥18,000 million in FY 1980 (April 1980-March 1981). This will be an increase of 7.2 percent over FY 1979 in the wake of a 1.9 percent growth in the previous fiscal year, according to its statement for FY 1979 drafted late in May.

In the current fiscal year, it plans to invest about ¥2,000 million in equipment for development of the MT-X medium jet trainer and production of P3C antisubmarine patrol aircraft parts.

The firm's aircraft business sales in FY 1979 totaled ¥16,793 million, of which slightly less than 90 percent were destined for the Defense Agency. Although aircraft sales declined to about ¥8,000 million, repair services increased to boost total sales by 1.9 percent. Aircraft sales included five helicopters, 12 T-3 trainers, and main wings and empennages for 17 F-1 support fighters. In FY 1980, aircraft sales will include 14 T-3s and parts for 18 F-1s. Repair services are expected to rise smoothly.

Meanwhile, Rockwell International of the United States discontinued its contract with FHI on joint production and marketing of FA-300 twin-engine business aircraft at the end of calendar 1979. FHI received ¥954 million in compensation from the US firm, and incorporated the fund into a special account for FY 1979. The company said it intends to put the business aircraft on market again if a new partner for joint business is found. The firm believes the performance of the FA-300 is excellent, it added.

## ECONOMIC

### MHI EYES PRIME CONTRACT ON MT-X PROJECT

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 pp 4,5

[Text]

MHI is expected to participate in the Defense Agency's MT-X medium jet trainer development and production contract, although it so far intends to serve only as a subcontractor.

Fuji Heavy Industries (FHI) and Kawasaki Heavy Industries (KHI) have already expressed hope to become a prime contractor on the basis of their internal research over the past several years. FHI recently invested in a small wind tunnel test system for the MT-X, while KHI has drafted four basic MT-X designs.

MHI may join them because Defense Agency sources said the MT-X will cover part of the missions of the T-2 trainer developed and produced by MHI. The company fears orders for T-2s will decline with the MT-X's being put into service. It will decide whether to participate after the agency's MT-X scheme takes definite shape.

However, the tripartite competition, if excessive, may lead to the possibility of a foreign aircraft being adopted as the MT-X, according to some sources. Therefore, some quarters of the three aircraft manufacturers are suggesting a joint contract with the agency.

The MT-X contract will total about ¥250,000 million as industry sources estimate 150 to 200 aircraft, costing around ¥1,300 million each, may be procured from the late 1980s. This, though smaller than the F-15 purchase, is the biggest military aircraft contract in Japan for the immediate future.



## ECONOMIC

### EUROPEAN FIRMS OFFER COMMUTER AIRCRAFT PROJECTS WITH JAPAN

Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 p 5

[Text]

Three European aircraft manufacturers have approached the Japanese aircraft industry separately about joint development of new commuter aircraft, leading to the possibility that the Japanese industry will further promote joint aircraft development with foreign counterparts.

Aerospatiale of France, Aeritalia S.p.A of Italy and CASA of Spain made the separate approaches when a fact-finding mission of the Society of Japanese Aerospace Companies (SJAC) toured western Europe in April, according to industry sources.

The commuter aircraft with around 40 seats is designed to fly between local cities and fill a gap between trunk air routes. The three European manufacturers will send the Japanese firms data about commuter aircraft development plans soon.

The Japanese industry has experienced joint aircraft development projects with foreign manufacturers. For example, the Boeing 767 program is under way between Japan's MHI, KHI and FHI, and American and Italian aircraft makers. In the past, FHI has developed a small business aircraft jointly with Rockwell International of the United States, and KHI designed a multi-purpose helicopter together with West Germany's MBB for joint production.

However, such medium aircraft manufacturers as NIPPI (Japan Aircraft Mfg. Co.) and Shin Meiwa Industry Co. have less experience in aircraft development. Especially, Shin Meiwa, which has excellent flyingboat technology, has been



seeking aircraft development projects as the Defense Agency's demand for its aircraft is declining. The firm said it has no intention of launching development of commuter aircraft because priority is on expansion of its flyingboat business. But some industry sources say the European offers may attract attention from Shin Meiwa and other medium sized Japanese aircraft manufacturers.

Demand for commuter aircraft is estimated at slightly less than 1,000 over the next 10 years and center in North America and Southeast Asia.

CSO: 4120

## ECONOMIC

### GOVERNMENT TO SET UP AIRCRAFT IMPORT FINANCING SYSTEM

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 pp 2,3

[Text]

The Ministry of International Trade and Industry (MITI) plans to set up an import credit system in FY 1981 to help Japanese airlines purchase aircraft developed jointly by Japan and foreign countries, including Boeing 767s.

In the Japan-US-Italy Boeing 767 program, Japanese aircraft manufacturers are responsible for 15 percent of the aircraft. Boeing Co. assembles and markets the plane. In case aircraft are purchased by Japanese airlines, the percentage corresponding to the Japanese production share will be exempt from the US Export-Import Bank's export financing.

MITI's system is designed to cover this amount and reduce the financial burdens of Japanese airlines purchasing aircraft of joint development and production. Among Japanese airlines, All Nippon Airways (ANA) has decided to purchase 40 767s.

The ministry will determine interest rates and other terms considering similar systems in other countries. It still has to choose a financing organization, although the Export-Import Bank of Japan and the Japan Development Bank are being considered.

The new financing system is also expected to promote Japan's collaboration with foreign companies in development of new aerospace equipment, including the Rolls-Royce/Japan RJ500 aero engine program and the Y-XX medium airliner project which will start later as well as the 767 program.

MITI's system is for aircraft subjected to Japan's joint development with foreign companies as one measure to promote domestic aircraft technology through international programs.

## ECONOMIC

### IHI, KHI REPORT DROP IN AEROSPACE DIVISION SALES IN FY 1979

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 p 3

[Text]

Ishikawajima-Harima Heavy Industries (IHI) and Kawasaki Heavy Industries (KHI) saw their aerospace division sales in FY 1979 (April 1979-March 1980) decrease from the previous year. A slight drop is also expected for the current fiscal year, though an increase is likely in FY 1981 and after.

IHI's engine sales for aircraft and space exploration equipment declined 20.5 percent to ¥43,300 million. Orders fell 34 percent to ¥42,500 million in the absence of Defense Agency orders for F100 engines. FY 1979 was mainly for preparation for production of new fighter engines. In the current fiscal year, engine parts exports to Rolls-Royce will be added to its sales. Indications are engine sales will turn upward in one to two years.

KHI's aircraft division sales in FY 1979 aggregated ¥53,370 million, down 2.6 percent, and orders ¥64,600 million, up 2.3 percent. Fuselages declined 3.3 percent to ¥43,871 million in sales and 7.2 percent to ¥48,042 million in orders. Jet engines increased both in sales and orders. Out of its equipment investment totaling ¥22,200 million in the fiscal year, it used about ¥4,500 million for aircraft manufacturing equipment. In the current fiscal year, investment of about ¥7,900 million is planned for the aircraft division to finalize KHI's aircraft equipment expansion program which started in FY 1978.

CSO: 4120

## ECONOMIC

### CAPITAL INVESTMENT CONTINUES FOR THREE BIG PROGRAMS

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 pp 3,4

[Text]

Four Japanese manufacturers continued to make capital investments in FY 1980 for the three aircraft programs covering the Boeing 767 airliner, the McDonnell Douglas/ASDF F-15 fighter, and the Lockheed/MSDF P-3C antisubmarine patrol aircraft. Three airframe manufacturers---MHI, KHI and FHI---and IHI, the largest aero engine manufacturer in Japan have each invested over ¥10,000 million since FY 1978. For FY 1980, their investment will total ¥11,000 million. Recovery of these investments will begin in FY 1982 when the three programs enter full swing.

MHI, the prime contractor of the ASDF F-15 program, made an investment of ¥10,000 million in FY 1978 to construct a new assembly plant. Delivery of the Boeing 767 fuselages from MHI will begin shortly. MHI will continue to invest in jigs and tools and such production facilities this year. MHI is also a subcontractor in the P-3C program.

KHI, the prime contractor in the MSDF P-3C program, invested some ¥9,000 million over the two years, FY 1978-79, to expand its Gifu plant. This year, the company will spend some ¥4,000 million to purchase production equipment, jigs and tools, for the three programs as well as for its BK117 helicopter program with West Germany's MBB. Investment will total ¥20,000 million for these programs by FY 1982.

FHI will invest ¥2,000 million this year for production equipment for P-3C wings. The company last year completed investment for production of Boeing 767 fuselage-wing fairings and F-15 main landing gear. Investment will also be made for research on the MT-X, the next ASDF multipurpose trainer.

IHI is the prime contractor of engines for the F-15 and the P-3C. In FY 1979, the company invested ¥3,300 million for equipment to produce Pratt & Whitney F100 turbofan engines. Another ¥5,000 million will be used this year to procure equipment and machinery needed in F-15 engine production.

In addition to the three aircraft programs, the RJ500 Anglo-Japanese joint aero engine program is expected to progress into a stage which will call for capital investment. IHI, MHI, and KHI are all involved in this program. KHI's investment for engine production facilities and equipment will total ¥3,000 million over two years, FY 1979-80.

CSO: 4120

## ECONOMIC

### HOKUSHIN TO PROMOTE INSTRUMENT SALES FOR CIVIL AIRCRAFT

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 p 4

[Text]

Hokushin Electric Works plans to activate its approach to foreign aircraft manufacturers on supply of instruments for civil aircraft. For that purpose, it will set up a sales outlet in Europe in addition to the United States and participate in tenders for aircraft instrument orders.

The company's aircraft instrument sales in FY 1979 totaled ¥2,600 million, of which instruments for civil aircraft were only ¥200 million. Although sales to the Defense Agency for military aircraft promise profits, they can be affected by defense policy. In view of this, it intends to explore new markets for instruments sales.

Hokushin has supplied Mitsubishi Heavy Industries (MHI) with instruments for the MU-2 and MU-300 business aircraft. MHI has sold 640 MU-2s mainly in the United States since 1966 and has orders and options for 60 MU-300s. Hokushin's instruments will also be used in the BK-117 helicopters developed jointly by Kawasaki Heavy Industries (KHI) and West Germany's MBB.

The firm expects steady instrument orders from MHI, KHI and MBB. It also intends to look for other aircraft manufacturers interested in its instruments to further increase sales for civil aircraft.

CSO: 4120

## ECONOMIC

### SJAC PARTICIPATION AT FARNBOROUGH

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 p 5

[Text]

The Society of Japanese Aerospace Companies (SJAC) will participate in the 1980 SBAC Air Show which will be held at Farnborough August 31 through September 7. This is the second time Japan will take part in the show, following the September 1978 show. Items to be exhibited include:

Nine product models and 21 panels showing such international programs as the Boeing 767, Rolls-Royce/Japan RJ500 aero engine and the Kawasaki/MBB BK-177 helicopter, and Japanese research and development projects on STOL, flying-boat, space exploration and the high-speed surface transport (HSST) system. Eleven panels describing activities of Japanese suppliers in the 767, F-15 and P-3C license production programs will also be on display.

Four films will show Japanese aerospace activities at the SJAC stand. Representatives of Japanese manufacturers and staff members of SJAC will attend the show throughout the period.

CSO: 4120



## ECONOMIC

### RADIO COMPANY LIKELY TO DEVELOP AA GUNNERY SIMULATOR

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 pp 5,6

[Text]

According to insiders, Japan Radio Co. will be selected as the supplier of a new optical-sighting antiaircraft gunnery simulator the GSDF plans to purchase during FY 1980. Funds of ¥140 million have been authorized. The simulator will train crews of various antiaircraft weapons systems of the GSDF including the L90 twin 35mm machine guns, surface-to-air missiles, and 12.7mm machine guns.

The simulator will look like a dome encasing the weapon. A 5m-high and 14.7m-wide simulated scenery and targets are projected. Students practice firing at targets through use of a laser ranging device. In case of antiaircraft missiles, targets will be illuminated by infrared light. Movement of targets is controlled by an instructor through terminals of a computer. In addition to the visual display, there will also be an audio system which will simulate different sounds.

Demand for simulators is growing in military applications. The ASDF has in operation flight simulators for fighters and trainers. The simulator for the F-15 was ordered from Mitsubishi Precision in FY 1979 for ¥3,700 million. The MSDF has simulators for antisubmarine patrol aircraft and submarines and the GSDF for the Model 74 main battle tank. There are also small simulators used in firing practice.

Performance and cost of Japanese-made simulators are quite competitive, according to sources, and manufacturers are trying to explore both domestic and international markets for a number of civil applications.

CSO: 4120



## HIGH GROWTH IN POSTAL SAVINGS ANALYZED

Tokyo INDUSTRIA in English Jun 80 pp 23-26

[Text]

Japanese post offices, exclusively handling a huge amount of postal savings, whose balance exceeded the ¥50 trillion mark for the first time late last year, started a nationwide real-time on-line system of cash dispensers for those savings in late February this year, almost eight years after Japanese commercial banks embarked on the similar services for their customers.

The balance of postal savings has been on a stable rise since 1960, when it topped ¥1 trillion for the first time. It amounted to ¥30 trillion at the end of 1977, followed by ¥40 trillion in July, 1978. Its average annual growth rate between fiscal 1976 and 1978 showed 22.4%.

The present balance of postal savings of over ¥50 trillion is five times as large as that of Dai-ichi Kangyo Bank, Japan's top-ranking private bank. It is even substantially higher than ¥14.9 trillion held by the world's largest Bank of America National Trust & Savings Association late in 1978. This virtually means that the Japanese post offices are the world's largest state-run financial institution.

As one of the major reasons for the popularity of postal savings, they cite Japanese people's confidence in the

post offices as the national enterprise. Its office network of more than 20,000 across the nation is administered and protected by the Ministry of Posts and Telecommunications. More than 10,000 enthusiastic salesmen are also one of the factors contributing to their rapid growth. Other prominent reasons often cited include the popularity of their fixed savings, which are reportedly more convenient than those at commercial banks, and tax privilege enjoyed by postal savings holders. Fixed deposits, showing growth of 80% in the past 10 years, account for about 87% of total postal savings. Their holders are exempted from tax under a law.

Meanwhile, major commercial banks and other private financial institutions are stepping up their efforts to counter the steep growth of postal savings. They plan to start bank-to-bank on-line cash dispenser service. In an apparent move to compete with fixed postal savings, they are studying measures to introduce time deposits carrying half-year compound interests. In their concerted efforts, private financial institutions are also scheduled to ask the Government to eliminate tax privilege given to postal savings holders.

However, the Ministry of Posts and Telecommunications decided to introduce savings accounts similar to those available at commercial banks, which enable an automatic transfer of users' salaries from their employers. The ministry is also planning to take measures to cover automatic payments by users of their public utilities charges, including those for gas, water, electricity and telephone, in a bid to diversify its services concerned with postal savings.

Through such computerization, the ministry hopes to push up its share of the nation's deposit market from the present 25% to 40% in fiscal 1985, the reflection of its aggressive stance in its savings war with private financial institutions.

CSO: 4120

## ECONOMIC

### INCREASING EXPENSE ACCOUNTS CITED

Tokyo INDUSTRIA in English Jun 80 pp 23-26

[Text]

Expense accounts are on an upturn again, according to an official report on actual conditions of Japanese business corporations in fiscal 1978. The report, compiled by the National Tax Administration Agency, is based on a survey on 47,412 corporations between February, 1978, and January, 1979. Expense accounts hit an all-time high of ¥2,613,900 million in fiscal 1978, up 8.5% from the year before. Expenses per day came to ¥7,160 million, up from ¥6,600 million a year earlier, according to the

report.

The amount of expenses per ¥1,000 of sales swelled to ¥4.46, a ¥0.13 gain from ¥4.33 in fiscal 1977. By industry, service companies ranked top with ¥11.37, followed by publishing-printing and construction companies. Meanwhile, the wholesale business was the lowest at ¥2.66.

Following a slow economic growth in the post-oil crisis recession, expense accounts resumed climbing in tune with recovering business conditions and showed no

signs of decreasing, partly because some corporations are apt to cover up expenditures unaccounted for on the expense account.

The Government has annually revised the ceiling of expense accounts reckoned in losses since the taxation system on such spending was established in 1954. Further steps should be required to tighten regulations on expense accounts to examine strictly whether they are really necessary for business activities.

CSO: 4120

## ECONOMIC

### TRADE BALANCE FIGURES FOR MAY REVISED

OW270435 Tokyo KYODO in English 0419 GMT 27 Jun 80

[Text] Tokyo, June 27, KYODO--Mirroring improved trade balance due to brisk exports, Japan's current-account deficit narrowed dollar 151 million to dollar 1,773 million in May from the previous month, revised government figures showed Friday.

The figure compared with dollar 889 million in the red in the corresponding month of 1979.

The overall balance was dollar 247 million in the red, off from a dollar 5,376 million deficit in April and a dollar 754 million deficit a year earlier, according to the joint Finance Ministry and Bank of Japan report.

Exports climbed 27 per cent over a year before to dollar 10,298 million in May, while imports soared 35 per cent to hit a record high of dollar 10,962 million, leaving a trade deficit of dollar 664 million against a dollar 831 million deficit in April and a dollar 4 million deficit a year ago.

On a seasonally adjusted basis, the trade balance showed a dollar 124 million surplus in May, for the first surplus since last June.

Invisible trade and transfers posted a deficit of dollar 946 million and dollar 163 million, respectively.

The long-term capital balance was dollar 979 million in the black, for the first surplus in three months. The figure compared with a dollar 2,240 million deficit in April and a dollar 845 million deficit a year before.

The short-term capital balance showed a dollar 334 million surplus against a dollar 638 million deficit in April.

CSO: 4120

## ECONOMIC

### ENTERPRISES SEE BUSINESS DOWNTURN IN OCTOBER-DECEMBER

OW011111 Tokyo KYODO in English 1041 GMT 1 Jul 80

[Text] Tokyo, July 1, KYODO--The government's economic planning authorities Tuesday published their finding that Japan's larger business operators are generally anticipating an eventual downturn of Japan's long brisk business activities during the coming October-December quarter.

The Economic Planning Agency's announced finding, if it proves to be true, would mean an eventual end to Japan's two-year business recovery from the 1974-mid-1978 recession.

The agency's finding represented a summary of its last quarterly check, made as of May 20, on business prospects of the management boards of a sampling of 1,521 larger Japanese industrial and commercial companies, all capitalized at yen 100 million or up in paid-up terms.

According to the survey, based on questionnaires, a predominant 75 per cent of the managing bodies were positive that Japan's continuing brisk domestic business activities will go on without a letup until the end of this July-September quarter. The 75 per cent figure represented a significant increase over an equivalent of 52 per cent found in the preceding February survey.

Also notable was a decrease from 42 per cent of the last check to only 22 per cent in the rate of those fearing a downturn of general business activities during this quarter. Those anticipating a still better upcurve was an insignificant minority of 2 per cent, the same as in the last survey.

But, for the next October-December quarter, a 43 per cent majority were visualizing an inevitable downturn.

As for domestic demands (industrial, governmental and consumer), the driving force behind most business activities, 39 per cent were visualizing a dip, also the first of its kind since the first or second quarter of 1978. An earlier dip during this July-September quarter was imagined by a minority of 25 per cent.

International demands involving Japan's exports were also expected by a sizable percentage of respondents to start falling in the October-December quarter, which implied a possible halt to Japan's continuing export growth since July last year.

As for the domestic market prices of the products of their respective companies, 43 per cent expected a continued rise as far as coming September, but only 20 per cent as far as this year-end. Thus, a large majority saw chances of new price markups only during this quarter.

Logically enough, optimism was prevalent among the respondents as to the sales prospects of their own firms. A predominant 84 per cent looked forward to continued quarterly rises over each preceding quarter or at least levelling-off during this July-September and the next October-December periods.

CSO: 4120

ECONOMIC

RECESSIONARY SIGNS PROMPT EVALUATION OF ECONOMY

OW031359 Tokyo KYODO in English 1238 GMT 3 Jul 80

[Text] Tokyo July 3 KYODO--The government is starting an evaluation of Japan's economy as it stands now from this week to next amid a growing call among industries for eased credit controls.

Government sources said Thursday recessionary trends have been seen in industrial production, exports and consumption in recent months.

In the aspect of prices, wholesale prices are generally believed to have already peaked out, whereas consumer prices, still continuing their rises, were still in the peril zone, the sources noted.

Amid recessionary trends in some sectors of the national economy and the still high interest rates, business bankruptcies in May topped the peril line of 1,500 cases.

Under such circumstances, there is a growing call among industries for a swift cut in the official discount rate and other measures to ease the credit squeeze.

Against such a background government officials in charge, mainly from the Finance Ministry, the Economic Planning Agency (EPA) and the Ministry of International Trade and Industry, are expected to discuss whether to continue the tight-money policy with the emphasis on price stabilization.

The officials are expected to make such a policy recommendation to the new cabinet expected to be formed later in the month.

CSO: 4120

## ECONOMIC

### 1979 TAX REVENUES LOWER THAN EXPECTED

OW041257 Tokyo KYODO in English 1241 GMT 4 Jul 80

[Text] Tokyo July 4 KYODO--Japan's tax revenues in fiscal 1979 totaled yen 23,723.2 billion (about \$107.8 billion), yen 327.2 billion (about \$1.5 billion) or 1.4 percent more than yen 23,396 billion estimated previously, it was announced Friday.

The difference was yen 127.8 billion smaller than the yen 500 billion forecast by the Finance Ministry earlier in the year.

The smaller-than-expected difference was attributed by the ministry chiefly to the slowdown in the growth of corporation tax revenues to 12.1 percent from the year-before level.

The slowdown, in turn, was due to the corporations' delay in paying the corporation tax by utilizing the deferred payment system so that the funds thus made available would be used more effectively.

Fiscal 1979 general account tax revenues for May totaled yen 2,664.5 billion, up 14.2 percent from the same month of the previous year.

This rate of increase was smaller than the 20 percent rise recorded in March and April.

CSO: 4120



## ECONOMIC

### INDUSTRIAL COOPERATION WITH UK, FRG NOTED

OWO41325 Tokyo KYODO in English 1254 GMT 4 Jul 80

[Text] Tokyo July 4 KYODO--A senior official of the Ministry of International Trade and Industry (MITI) said Friday he had agreed with British and West German Government authorities to aid in the buildup of industrial cooperation among the three countries.

Ichiro Fujiwara, director general of MITI's International Trade Policy Bureau who has just returned from a visit to the two countries, made the remark at a news conference.

In Britain, Fujiwara said it was agreed that the two governments should help the Japan machinery exporters' association and the British institute of management in their talks on cooperation.

Fujiwara also said it was also agreed with the British authorities that the two governments should help the two countries' insurance interests work for joint insurance arrangements and their financial institutions for joint financing arrangements.

He said British officials asked Japan to ensure that its exports of autos were more orderly.

West German authorities said they would like to adhere firmly to the principle of free trade and asked Japan indirectly to use moderation in exporting autos to the European common market, the official said.

CSO: 4120

## ECONOMIC

### LEADING CORPORATIONS FOR 1979 NAMED

OW041129 Tokyo KYODO in English 0858 GMT 4 Jul 80

[Text] Tokyo July 4 KYODO--Honda Motor Co. retained its lead among 149 principal corporations in income in the financial year ended February 29 for the sixth straight year, it was announced Friday.

The National Tax Administration Agency announced the self-declared incomes of the 149 corporations of 11 industries, each capitalized at yen 500 million or more, which settle their annual accounts at the end of February, and the names of the 10 top earners.

Honda's income in the business year totaled yen 58 billion (about \$264 million), a sharp 91.3 percent increase, due chiefly to a surge in exports of fuel-efficient small cars mainly to the United States and a considerable gain in its yen receipts as a result of the yen's exchange value depreciation.

The second position went to Ito-Yokado Co., a leading chain store, whose income jumped 35.6 percent thanks chiefly to increased sales of furniture, home electric appliances and foodstuffs.

Mitsukoshi, Ltd., the big major department store, was third with its income down for the second year in a row. Its sales of clothing and other items sagged and its profits dropped about 9 percent.

Daiei Inc., Nichii Co. and Jusco Co.--all major supermarket chains--and Takashimaya Co., the big department store, were also among the top 10 earners.

The tax agency said the combined sales of the 149 corporations totaled yen 11,447.4 billion, up 11.6 percent from the previous year.

Their self-declared incomes came to yen 373.4 billion (about dollar 1.7 billion), up 20.1 percent.

Their corporate taxes reached yen 132.5 billion (about dollar 602 million), up 21.3 percent.

Nine of the 11 industries involved, including foodstuffs, electric machinery, transport machinery and wholesale and retail, reported higher profits, in contrast with reduced earnings recorded by the service and miscellaneous enterprises.

CSO: 4120

## ECONOMIC

### TAX AUTHORITIES REVIEW CONSUMER SPENDING IN 1979

OW041131 Tokyo KYODO in English 0905 GMT 4 Jul 80

[Text] Tokyo July 4 KYODO--Japan's commodity tax collections, a key barometer of consumer spending, during fiscal 1979 hit a new all-time high of yen 1,111.8 billion topping yen 1,000 billion for the first time, national tax authorities announced Friday.

The commodity tax is a kind of indirect national tax imposed, either at the retail sale or manufacturer's product shipment level, on a total of 68 kinds of consumer goods, both domestic products and imports.

The tax is levied at six different rates between 5 and 30 percent of the net taxable value of such commodities, depending on their characters, including degree of luxury.

According to the announcement of the National Tax Administration Agency, the combined net taxable value of such commodities in fiscal 1979 totaled yen 8,020.7 billion, 14 percent up from the year before. The duties collected came to yen 1,111.8 billion, 15.2 percent up.

Ten principal items were (1) passenger cars and other vehicles, (2) air-conditioners, (3) television receivers, (4) jewelry, (5) refrigerators and allied goods, (6) tape recorders and the like, (7) cosmetics and toiletries, (8) phonographic records, (9) car coolers, and (1) musical instruments.

That order was almost unchanged compared with the preceding year, with only the sixth, seventh and eighth items respectively rising from the eighth, dipping from the sixth and dropping from the seventh places of the year before.

The top three items accounted for no less than 52 percent of the entire tax collections. Passenger cars and other vehicles, totaling yen 2,599.3 billion in taxable value, brought yen 402.4 billion in tax collections, 13.8 percent up from the preceding year.

In volume, they totaled 2,871,000 units, of which imports totaled only 65,000. Fuel-efficient diesel-engine and midget autos were conspicuous for their sales volume growth.

Air-conditioners, totaling yen 542.7 billion in taxable value, yielded yen 108.5 billion in tax revenue, 31.2 percent up. Increasing by more than 30 percent for the second consecutive year, they are believed to have attained 39.2 percent in the rate of dissemination among Japanese homes.

TV receivers, yen 470.3 billion in taxable value and yen 70.5 billion in tax collection, 9.7 percent up, numbered seven million units, including 5.1 million in new popular multiplex sound (stereophonic, dual language) TV sets.

Imported goods totaled in tax collections, yen 58.2 billion, a 41.4 percent increase from the year before, though far less than yen 1,053.6 billion for domestic products, 12.4 percent up.

CSO: 4120

## ECONOMIC

### CONSTRUCTION MINISTRY RECOMMENDS RURAL IMPROVEMENT

OW080141 Tokyo KYODO in English 0123 GMT 8 Jul 80

[Text] Tokyo July 8 KYODO--The Construction Ministry said Tuesday efforts should be made in the future to promote land development for the chief purpose of correcting wide gaps existing among prefectures.

In its annual white paper on construction, reported to the regular cabinet meeting by Construction Minister Eiichi Watanabe, the ministry noted that the gap between large urban areas and rural communities is narrowing as the population is showing a continuing tendency of becoming fixed in rural areas.

The white paper noted that the mass movements of the population to the urban areas, continuing since the end of World War II, have come to an end.

This has resulted in narrowing the regional gap between major urban areas and rural communities, it said.

To further narrow the gap, the white paper said efforts should be made to improve social capital to meet rising demands of the people for better living environment.

It said efforts should be made to redevelop nuclear cities located around large cities and build towns in an orderly manner as well as improve the livelihood levels and environment.

The white paper also said policies should be taken to improve the living environment in rural areas in order to afford residents more job opportunities and facilities similar to those in existence in large cities.

As to housing policies, a matter of top concern for the people, the white paper stressed that the housing level of the people has improved.

It pointed out that the number of occupants per room declined to 0.8 in 1978 from the 1.2 in 1963, or about the same level as those of France and Italy but still below those in the U.S. and Britain.

The white paper said a total of 1,487,000 houses were constructed in fiscal 1979, ended last March, or 0.8 percent less than in the previous year.

It said, however, that the houses built were larger in size with a floor space averaging 92.4 square meters, or 4.6 square meters more than in fiscal 1978.

The white paper predicted that 10 areas in Japan, including southern Kanto and the Kyoto-Osaka-Kobe area, will continue to suffer from a water shortage although the ministry plans to build multipurpose dams at some 360 places across the country by 1990.

It said such dams are being built since the National Land Agency, in its long-range water demand program, estimates that demand for water in 1990 will increase 26.9 billion tons from 1975 to 114.5 billion tons annually.

CSO: 4120



## ECONOMIC

### BRIEFS

**OIL PRICE MARKDOWN**--Tokyo, 24 Jun--All but one of Japan's 13 crude-oil importing or refining companies reduced the prices of their oil products between June 20-24, it was learned Tuesday. The unprecedented price markdowns of oil products was carried out to return so-called windfall exchange profits to consumers. Such profits materialized because of the sharp appreciation in the yen's exchange value since last April, which has more than offset recent increases in the price of crude to the companies. The only oil company which has not yet reduced its prices is Daikyo Oil Co. of Tokyo. The Japanese Ministry of International Trade and Industry had advised the firms to lower their prices to protect consumers and aid anti-inflationary policy. Margins and effective dates of price reductions vary among the 12 companies. Ranging between yen 1,000 and yen 2,800 in uniform reduction per kiloliter (roughly 1.5 and 4 percent), the price markdowns were retroactive to the start of this month, to June 20 or effective coming Friday or July 1. [OW241325 Tokyo KYODO in English 1110 GMT 24 Jun 80]

**MEXICAN CRUDE SHIPMENT**--Kagoshima, 28 Jun--A 135,000-deadweight ton oil tanker with the first shipment of crude oil from Mexico arrived Saturday at the Kiire crude storage base of Nippon Oil Company at Kiire, Kagoshima Prefecture, southern Japan. The oil tanker, the Juanita, came here with 290,000 barrels of Mexican crude oil purchased by the Mexico Oil Import Company of Tokyo, a joint venture of 36 Japanese domestic oil refining companies, trading houses and banks, from PEMEX, the state-run Mexican Petroleum Corporation. The Japanese and Mexican governments have confirmed a supply quota of 25,000 barrels a day of Mexican crude oil to Japan as a result of the visit to Mexico in May of the late Prime Minister Masayoshi Ohira. [Tokyo KYODO in English 1001 GMT 28 Jun 80 OW]

**NONFERROUS METALS STOCKPILE**--Tokyo, 30 Jun--The Ministry of International Trade and Industry (MITI) has decided to set up a semigovernmental stockpile of nonferrous metals like tungsten and molybdenum in fiscal 1981, starting next April, in a bid to bolster Japan's economic security, MITI sources said Monday. MITI will help related industries, including automobile and special steel, establish a body handling the stockpiling by providing financial support. For example, it will guarantee coverage of

liabilities in the stockpiling, according to the sources. MITI at first will limit the nonferrous metals to be stored to tungsten, molybdenum and cobalt, the sources said. Among the scarce nonferrous metals, Japan depends on Zaire for 80 percent of its total cobalt imports and on South Africa for 71 percent of its chrome imports. At present, Japan has only a stockpile, owned by a private association, of 2,000 tons of nickel (worth yen 2.3 billion) and 3,000 tons of chrome (worth yen 0.5 billion). [Tokyo KYODO in English 0732 GMT 30 Jun 80 OW]

OIL RIG FOR DENMARK--Osaka, 1 Jul--Hitachi Shipbuilding and Engineering Co. said Tuesday it has won a yen 8 billion order from J. L. Offshore Drilling A/S of Denmark for an oil drilling rig. Payment will be made in yen cash. The drilling company is expected to use the rig in the North Sea after receiving it in October 1981. The rig can be used for drilling to a depth of 6,100 meters. [Text] [OW011305 Tokyo KYODO in English 0635 GMT 1 Jul 80]

JAPAN-PRC ECONOMIC ASSOCIATION--Tokyo, 1 Jul--The Japan-China Economic Association has appointed Toshiwo Doko, former president of the Federation of Economic Organizations (Keidanren), as president of the association effective 30 June. Doko succeeded Yoshihiro Inayama who became advisor of the association. President Doko will visit China around this August to negotiate with the Chinese Government on improvements to the present Japan-China long-term trade agreement. [Text] [OW011305 Tokyo KYODO in English 0414 GMT 1 Jul 80]

JUNE GOLD, EXCHANGE RESERVES--Tokyo, 1 Jul--Japan's gold and foreign exchange reserves increased dollar 1,238 million during June to reach dollar 22,642 million at the end of the month, the Finance Ministry announced Tuesday. It was the third straight monthly increase. [Text] [OW011305 Tokyo KYODO in English 0756 GMT 1 Jul 80]

THERMAL POWER PLANT--Nagasaki, 1 Jul--An igniting ceremony was held Tuesday to mark the completion of a 500,000-kilowatt-capacity generator at what would be Japan's largest coal-fired thermal power plant near here. The generator is scheduled to go into commercial operation in January 1981. The Matsushima thermal power station is being constructed by the state-financed Electric Power Development Company. The power house will be equipped with two generators each with an output capacity of 500,000 kilowatts. [Text] [OW011305 Tokyo KYODO in English 0507 GMT 1 Jul 80]

EXPORT GROWTH SLOWS--Tokyo, 2 Jul--Signs of slow growth have emerged in Japanese merchandise exports, official figures indicated Wednesday. Export letters of credit (L/Cs) received by Japanese firms in June came to dollar 7,266 million, up 6.4 percent, according to a report released jointly by the Finance Ministry and the Bank of Japan. It was the smallest year-to-year gain since 5.5 percent in March 1979. After seasonal adjustments, the L/C figure represented a 6.5 percent decline

from May. Export L/Cs are considered a leading indicator of actual shipments 2 or 3 months ahead. Itemwise, exports of electric machinery and automobiles continued to climb. But steel and chemical products dropped sharply, pulling down the L/C growth as a whole. Electric machinery rose 23 percent from the year before, automobiles 19 percent; and textiles 12 percent. Steel products moved down 7 percent; chemicals 11 percent; and food 37 percent. By area, exports to the United States and Asia fell below a year ago levels, whereas those to Europe and the Mideast maintained a firm tone. [Text] [Tokyo KYODO in English 0353 GMT 2 Jul 80 OW]

CSO: 4120

## SCIENCE AND TECHNOLOGY

### TR&DI TO DEVELOP LASER-GUIDED ANTITANK MISSILE

Tokyo JPE AVIATION REPORT-WEEKLY in English 18 Jun 80 p 9

[Text]

Following recent selection of the KHI/NEC group as the contractor for the target tracking/homing system, the TR&DI, JDA is now ready to develop the Chu-MAT, a laser-guided medium-range antitank missile next year for the GSDF.

The Chu(Medium-range)-MAT is the first weapons system for which the TR&DI requested design competition. The KHI/NEC group's design was adopted by the TR&DI over MELCO and Toshiba proposals. In the past, the TR&DI usually nominated a specific manufacturer for development of each item. The TR&DI is satisfied that it will obtain excellent designs with built in cost-effectiveness through competition, sources say.

The Chu-MAT will become the first Japanese precision guided missile (PGM) using laser technology. It will be equipped with a laser-detector and will home on the target illuminated by laser by the ground crew. The range is said to be 1.5 to 2 kilometers. The KHI/NEC group will manufacture both the laser-illuminator and the homing head.

Antitank missiles for the GSDF have already been manufactured by KHI. The company produced the Model 64 ATM and the Model 79 antiship/tank missile. The Model 79 has a range of 4 km and was formerly known as the Ju-MAT. Both missiles are wire-guided.

It is expected that the TR&DI will request design competition for other guided missiles to be developed domestically.

CSO: 4120

## INDUSTRIALIZATION OF SILICON CARBIDE FIBER PROMOTED

Tokyo INDUSTRIA in English Jun 80 pp 23-26

### [Text]

The Research Development Corp. of Japan, an institute owned wholly by the Japanese Government, announced in February, 1980, that it has entrusted Nippon Carbon Co., Ltd., a major graphite electrode maker, to develop technology for production of continuous silicon carbide fiber from polycarbosilane as its material. Glass fiber is widely used as a material to produce light and strong composite materials. In recent years, carbon fiber has been put to practical use and technological development has made a rapid progress in this field. Silicon carbide fiber, which outperforms existing materials of this kind, will be put to practical use before long for the first time in the world.

Silicon carbide fiber has two outstanding properties. One is that it does not react to metals. Therefore, silicon carbide fiber makes it possible to produce composite materials with metals. The other is that it does not lose tensile strength under high temperature. Therefore, silicon carbide fiber excels in heat-resisting capacity during fabricating processes and in service. If silicon carbide fiber is mass-produced, a fresh demand is expected to be developed for silicon carbide fiber as fiber reinforced composite materials.

Conventionally, efforts were made to develop boron fiber and other materials for a similar purpose. But they have not yet been put to practical use. This was chiefly because of processing difficulties and high prices of these materials. Silicon carbide fiber was one of such new materials under study. However, researchers have been unsuccessful in producing fibers strong enough to be fit for use.

Silicon carbide, which is widely used for whetstone and cutting tools, cannot be fabricated into continuous fiber through ordinary methods. A research team led by Prof. Seishi Yajima at Tohoku University's Research Institute for Iron, Steel and Other Metals developed the basic technology to produce silicon carbide fiber. Nippon Carbon has continued studies since 1975 when the company acquired the right to apply the technology.

Tohoku University is noted for studies on metals. Prof. Yajima has had close contacts with Nippon Carbon since he was a researcher at the Japan Atomic Energy Research Institute. Nippon Carbon supplied carbon materials of high purity to the institute. Meanwhile, President Toshikatsu Ishikawa of Nippon Carbon has once served as a lecturer at Tohoku Univer-

sity. Nippon Carbon, whose mainstay product is graphite electrode, produces various carbon products and is known for its high technology for carbon production.

In addition, Nippon Carbon is the pioneering manufacturer of carbon fiber in Japan. In Japan, the Government Industrial Research Institute of Osaka developed basic technology for production of carbon fiber. Nippon Carbon's researchers participated in the development efforts. Three makers undertake production of carbon fiber under patent licenses from the Osaka institute. At present, Japan supplies about 70% of the world's carbon fiber demand.

Nippon Carbon produces carbon fiber under the brand name of Carbolon. The company's technology for burning an organic fiber and turning it into an inorganic one led to development of silicon carbide fiber.

Under these circumstances, Nippon Carbon will tackle with the development of technology for production of silicon carbide fiber. The company has already built a pilot plant with a monthly output capacity of 25 kilograms at a research institute in its Yokohama Plant. Nippon Carbon will construct a plant with a monthly output capacity of 1 ton with subsidies supplied by the Research Development Corp. of Japan. The company plans to start commercial production in three years.

Nippon Carbon's process calls for producing silicon carbide fiber from

polycarbosilane as materials. Conventionally, this process was complicated and cost too high. Nippon Carbon developed a new process to produce polycarbosilane from dimethyldichlorosilane as the starting material. The new process calls for melting polycarbosilane for spinning, and burning it to produce silicon carbide fiber. It was very difficult to spin and prevent adhesion. The company is now confident of mass-producing silicon carbide fiber, named "Nicalon."

The product is an aggregate of fibers with 10~12 microns in diameter. The fiber's specific gravity is 2.8 with tensile strength measuring 250~300 kilograms per square-millimeter. The light, strong and flexible fiber keeps strength in the air even under the high temperature of 1,300 degrees Centigrade. It does not react to any metal. The silicon carbide fiber can be used as a reinforcing materials for light metals like aluminum to produce strong composite materials for the use of aircraft and space equipment. The fiber will be also mixed with nickel, heat-resisting alloy and ceramics to produce heat-resisting materials for the use of gas turbines. If the fiber is mass-produced, the price will be reduced to the level good enough for practical use. Nippon Carbon is producing another new product in the world.



## SCIENCE AND TECHNOLOGY

### DEVELOPMENT OF NEW FUEL FROM METHANOL, DUST COAL PLANNED

OW031331 Tokyo KYODO in English 1102 GMT 3 Jul 80

[Text] Tokyo, July 3, KYODO--A new fuel produced from blending methanol and dust coal could be developed in Japan during the next five years, it was reported Thursday by the NIHON KEIZAI SHIMBUN.

According to the influential economic daily, two semigovernmental energy research think-tanks are expected to launch next October a joint research and development project, possible with industrial cooperation, to create the proposed substitute fuel tentatively called "methacoal."

The two research bodies--the Institute of Energy Economics and the Institute of Applied Energy--have been prompted to undertake the venture by the Japanese electric power industry and the Agency of Natural Resources and Energy, Ministry of International Trade and Industry (MITI).

The methacoal looks so promising that MITI itself plans to have the agency launch next April a five-year government project to develop it.

To get the methacoal materials the two institutes and MITI and its agency are visualizing effective utilization of brown coal, a still hardly used semi-carbonized coal, and some kinds of natural gas unfit for liquefaction.

Such items are easily and cheaply available. Methanol, that is, methyl alcohol, is a well-known industrial material efficiently produced in Japan and other countries and also easily available at a low cost. The proposed fuel will be as stable as oil and easy to haul or store.

Thus, if things go well, Japan's electric power industry could commercially start using it just like fuel oil by 1985.

Apart from methacoal, a mixture of fuel oil and dust coal, called "com" (coal-oil mixture), has already been experimentally developed by the semi-governmental Electric Power Development Co., of Tokyo, and is now being tested in power plants. But "methacoal" will be completely free from oil.

CSO: 4120



## SCIENCE AND TECHNOLOGY

### BRIEFS

COMPUTER ELEMENT IMPROVEMENT--Tokyo, 1 July--A new easily mass-producible and durable type of the Josephson junction element, a wonder electronic element promising a revolutionary speedup of computers, has been developed by a researcher at the Institute of Physical and Chemical Research, in Tokyo, it was announced by the institute Tuesday. According to the prestigious private Japanese institute, the "quasi-plane (horizontal) junction element," different in concept from the two kinds of such element so far developed abroad, including one by IBM (International Business Machines Corp) of the United States, features a combination of the advantages of those two kinds. On top of that, the new element, requiring microscopic electronic circuits of no more than 0.2 microns in line width, can be produced by the conventional official (photographic) method of circuitry image printing, instead of the far more complex and expensive electron beam printing process. This means a decided cost-saving advantage for industrial production. The institute identified the developer of the new element as Hiroshi Ota, and said the institute, together with the Japanese Government's Agency of Science and Technology which has financed his 1978-80 research project, have jointly sought American patents on various points of his process of making the new element. [OW011305 Tokyo KYODO in English 1242 GMT 1 Jul 80]

NEW GROUND RADAR--To meet requirements envisaged for land battles in the late '80s, the GSDR and the TR&DI, JDA plan to start development in FY 1981 of a new ground radar system. The GSDF is said to be wanting funds to fabricate at least two prototypes. The Model 71 ground radar (TPS-P6) currently in service is carried by a 3/4-ton wheeled vehicle. The new ground radar will have better performance including improved electronic counter countermeasures (ECCM) capability as well as improved mobility. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 11 Jun 80 p 10]

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